Trees.

A Very Merry Xmas to All From Rancho Costa Plenta

Ohio Short Course for Arborists and Nurserymen, Columbus, Jan. 21-23

Factors Affecting Nut Tree Propagation — *F. L. O'Rourke*

Hail Injury to Trees — *David H. Marsden*

November-December, 1951 — *The Journal of American Arboriculture* — Vol. 12—No. 1

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TREES Magazine is a bi-monthly Journal published at Cleveland, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., P. O. Box 5607, Cleveland, Ohio. Subscription by mail $2 per year: outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY

With . . .
EDW. SCANLON

■ WE WISH YOU a very MERRY CHRISTMAS and, WE HOPE, a PEACEFUL NEW YEAR. Our FINGERS ARE CROSSED on the LATTER hower.

■ **SELDOM will you ENCOUNTER a group AS ENTHUSIASTIC as that attending the ORGANIZATIONAL MEETING of PLANT PROPAGATORS in Cleveland, Nov. 8-9. It has LONG BEEN FELT there WAS A NEED for such a group and THIS MEETING PROVED IT to the SATISFACTION OF ANY who may have BEEN SKEPTICAL.**

■ The SPEAKERS AND THEIR TOPICS, relative to PROPAGATION, of course TURNED THE TRICK. All were excellent—FORREST STRONG, STEVE O'ROURKE, DICK FILLMORE, JIM WELLS and LOUIE CHADWICK. The proceedings MUST AND WILL be printed.

■ **A COMMITTEE OF TEN has been named TO DRAFT a constitution for a PERMANENT PROPAGATORS GUILD. They will report at A MEETING to be held in DEC. OF 1952.**

■ In the SEPT.-OCT. issue WE SLIPPED on FRED RALSTONS AD. The city should have been ALLSTON, MASSACHUSETTS, instead of NEWTON, MASS.—ALLSTON is the home of the U. S. TREE CLIMBING CHAMP.

■ **FRANK KARPICK, Ass't City Forester at BUFFALO needs help. HE WANTS back copies of ARNOLDIA, the publication of the ARNOLD ARBORETUM. The numbers he seeks are VOL. 9, No. 9—VOL. 10, No. 1, 6, 10, and 11. FRANK will GLADLY TRADE some of that BUFFALO SNOW for these numbers. The address is BUREAU OF FORESTRY, 29 Northampton St.**

■ The NEW JERSEY National Arbor Day Committee having been successful in obtaining legislation making the "LAST FRIDAY IN APRIL" as ARBOR DAY will continue to function IN PROMOTING a revival of the MORAL AND ESTHETIC VALUES of ARBOR DAY. We hope other states on the NATIONAL ARBOR DAY list can get up the steam HARRY BANKER, as chairman, HAS STOKED in his state.

■ **The AMERICAN ASSOCIATION OF NURSERYMEN has been paid a SINGULAR NATIONAL HONOR for its progressive "PLANT AMERICA" program. The AMERICAN TRADE ASSOCIATION EXECUTIVES informed DICK WHITE, Executive Secretary, of the GRAND AWARD "for having rendered outstanding service to the industry which it represents as well as to the American Public."**

■ Of course YOU ARE GOING to the 30th meeting of the CONN. TREE PROTECTIVE ASS'N., Jan. 23rd, Stratfield Hotel, BRIDGEPORT, CONN. JOHNNY WOODRUFF says you SHOULD GO so what can YOU DO.

■ **We were TERRIBLY SHOCKED to learn, from LARRY WACHTEL, of the death of GRIGGS WARING, JR., son of MILWAUKEE'S CITY FORESTER. Young GRIGGS, 22, was working for the DAVEY TREE EXPERT CO. While helping in a TAKEDOWN, a large limb fell and INFLICTED INJURIES that proved fatal within an hour. Our SINCEREST CONDOLENCES go out to GRIGGS AND MRS. WARING in this tragic loss.**

■ About TWO YEARS AGO the LATE ALTON OGDEN, CITY FORESTER of FLINT, MICH., sent the N. S. T. C. SHADE TREE SELECTION COMMITTEE pictures of several SPLENDID CANDIDATES for the Committee's work. One of these trees a LYRE SHAPED SUGAR MAPLE has been named the "ALTON OGDEN SUGAR MAPLE." The tree has recently been given a thorough going over by BILL RUTH, PRESENT CITY FORESTER, after a sidewalk laying gang had DONE SOME ROOT DAMAGE.

■ **We have NOW REACHED an ENVIABLE POSITION in AMERICAN HISTORY. It is NOW NECESSARY to establish a DEPARTMENT OF WASTE in order to maintain our PHONY ECONOMY — this means an ALMOST PERPETUAL WAR and a HUGE MILITARY MACHINE — how better can you WASTE ANYTHING.**

■ Softly and silently and slow descends the snow—say I DIDN'T KNOW I had SUCH TALENT, I think I'll brush that line up a bit and START A POEM—but anyway that's the way it is here LOOKING OUT OVER the FIELDS OF COSTA PLENTA. Eight or ten inches of white, HANGING IN THE TREES and bulging over the eaves of the barn. IT'S BEAUTIFUL but POOR GROWING WEATHER—no LEAVES.

■ **JACK KENEALY spent a COUPLE OF DAYS at the RANCHO after the PROPAGATORS' MEETING. About THREE MEALS after he arrived I knew I had to GET SOME WORK out of him or GO IN THE RED for the month, so he graciously AGREED TO HELP prepare a couple of SEED BEDS.**

■ E. B. "STILLY" STILSON veepe and general manager of sales for the HARDIE MFG. CO., has commenced HIS RETIREMENT. "STILLY" plans to take advantage of a certain ORANGE GROVE as his next venture. BEST OF LUCK.

■ **I WAS FORTUNATE in obtaining the small WHITE PINE (P. strobus) that DICK FILLMORE used at the PROPAGATORS' MEETING to demonstrate A SIDE GRAFT of LACEBARK PINE (P. bungeana). The graft was HANDLED A LITTLE ROUGHLY by persons interested in CHECKING CLOSELY on the technique. However WE'LL GROW the WHITE PINE on and have it TO PLANT at a future PROPAGATORS' MEETING.**

■ BILL GULLAM has sent me the date of the 1952 MASS. TREE WARDENS AND FORESTERS ASSOCIATION meeting. It will be held at HORTICULTURAL HALL—Hotel Kenmore in Boston IS HEADQUARTERS, Feb. 6 and 7.

■ **Saw a GOOD LICENSE number. FERD MASSO, the west CLEVELAND tree man couldn't get TWO S'es so he made it up by combining two 5's to make MA 550. Cute huh?**

■ Several NICE LETTERS from WEST COAST AGENTS renew our regrets at having SO LITTLE TIME, around SAN FRANCISCO and L. A., in which to call on some of OUR OLD FRIENDS there. Next time WE'LL HAVE our return reservations AHEAD OF TIME. Had to take the FIRST AIRPLANE that came along.

■ **SAM RICH and I were walking around the BEAUTIFUL STATE CAPITOL IN SALEM, ORE., looking at the trees when, WHAMMO, one hit us RIGHT IN THE TEETH. The BLOOD RED SEED CLUSTERS and RICH, LUSTROUS, DARK GREEN FOLIAGE would STARTLE ANYONE. Believe it or not IT WAS AN AILANTHUS—and a THING OF BEAUTY if ever I SAW ONE. The foliage was NOT SO COARSE as the species, MORE FINELY CUT and AS DARK AS A NORWAY MAPLE. What a tree—YOU'LL CHANGE your mind about the AILANTHUS WHEN YOU SEE this. SAM'S GOING TO GROW IT.**

■ In the event YOU DON'T KNOW the upright White Birch (B. ALBA FASTIGIATA) you SHOULD GET ACQUAINTED with it. It's very NARROW, DELICATE and the WHITE BARK makes it a LOVELY THING for landscape use. There's a WINTER PICTURE back on page 5.

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TREES MAGAZINE
Box 5607, Cleveland 1, Ohio

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Nov.-Dec., 1951 **Journal of the National Arborist Association** Vol. 12—No. 1

EDWARD H. SCANLON, Editor
Box 5607, Cleveland 1, Ohio
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"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

KEEP ON PLANTING OAKS

Altho most oaks become good sized, to very large, trees at maturity they are generally among our very finest trees for street, home and park planting. Probably because the oak is a synonym for durability, longevity and stability the idea has become fairly well established that the oak, all oaks, are slow growing. Nothing could be farther from the truth—on the contrary few oaks are slow growers.

The majestic and picturesque Coast Live Oak (Quercus agrifolia) is one of the fastest growing ornamentals under cultivation. In fact this question was brought up at the first Western Shade Tree Conference, at Santa Monica, in 1934, and each comment brought forth several more, of examples of the rapidity of growth of this supposedly slow growing oak. The clinching evidence of its speed of growth was provided by the eminent physiologist Dr. D. T. Macdougal who stated, "sap may for example move at high speed in any part of the trunk of the California Live Oak (Q. agrifolia)." Theodore Payne also furnished some vivid descriptions of growth speed, one for example—a friend of Theodore's planted a Live Oak acorn in the Arroyo Seco (this is where the Rose Bowl is located) in 1912. In 1926 it measured fourteen inches in diameter, or an inch of trunk increment per year, not exactly slow. Other examples conformed to the inch per year growth rate.

In other parts of the country oaks have almost equally acceptable growth records. In the south, the unusual Willow oak (Q. phellos) and Texas oak (Q. shumardi) make excellent trees in ten years. In the northern states Pin oak (Q. palustris) according to a growth record study made at the Morton Arboretum a few years ago, will make about 19 feet in ten years. The brittle, lustreless Silver maple will make 25 feet, that is if a wind storm hasn't broken it to pieces. Other good oaks are the Shingle, Scarlet, Red, English, Sawtooth and White. Trees of this character give our communities and homes stability and color. They are not like the Silver maple and Chinese elm, drab colorless things in the fall, rather they are among the leaders in the fall color parade. And all summer their lustrous gay leaves liven up hot days.

In the past few years we have been confronted with an ogre that looms as a psychological threat to the future extensive use of the oak in our ornamental plantings. Oak wilt

(Chalara quercina) has come out of nowhere and has struck viciously in Wisconsin, Iowa and Illinois. It is widely distributed, as far east as Ohio and Pennsylvania, but here it is compartively docile, at least at the present. Nothing is known of how it spreads and on this basis the far removed, isolated cases in Ohio could mean that it has been with us for many years in such a mild state that it never aroused concern until the holocaust that occurred in Illinois, and surrounding states, stirred up or scared everyone into a serious investigation of declining oaks in other sections. This is as it should be, but we should not be panicked into deserting the oak on the basis of what little is known today about Oak wilt. On the contrary, on the basis of what little is known, oak planting should be stepped up because of the many obvious advantages accruing from forest and ornamental plantations of these fine species.

It is sincerely hoped that a sound thorough research program, with adequate financing, can be set up to determine exactly what makes Oak wilt tick. This should be done with the least amount of publicity. The public should not be unnecessarily stirred up over a potentiality when we have a real live Frankenstein in our midst that we know something about and which we can do something about, that is, Dutch Elm Disease.

Flowering Trees of the Caribbean

There have been many beautiful books published in some phase of the plant world but none, we have ever seen, contains the large magnificent colored paintings that make this book truly outstanding. The twenty-nine full color reproductions of the flower and foliage of the most beautiful flowering trees in the world are masterpieces of detail and color. They could easily be mistaken for color photographs. Each picture is 8″ x 9″, and gorgeous. The text is informative and beautifully written, and scientifically correct. The text was written by a number of authors and the paintings were done by Bernard and Harriet Pertchik. The book is 9″ x 12″, contains 125 pages and sells for ten dollars. This would be a splendid gift for special clients or for wives to give to their arborist husband for Christmas—regardless, it is a collector's piece and you should own it. The book is published by Rinehart and Co., Inc., New York, N. Y. —or order from TREES Magazine.

It's a Break for City Trees

City trees may become more plentiful once the root of the problem is reached —literally.

The answer, according to the American Public Works Association, may be the new porous asphalt being tried out in Providence, R. I. This asphalt allows 80 per cent of the rainfall to percolate to the tree roots.

At present, trees in paved areas has not prospered because there was not enough open ground around the tree to allow sufficient moisture to reach root ends.

In the Providence experiment trees were planted in asphalt-paved pedestrian "islands" which were "dished" to retain the water.

COMING EVENTS

New Jersey Federation of Shade Tree Commissions, Hotel Traymore, Atlantic City, N. J. December 3 and 4.

Indiana Arborist's Association, Lafayette, Ind. January 10.

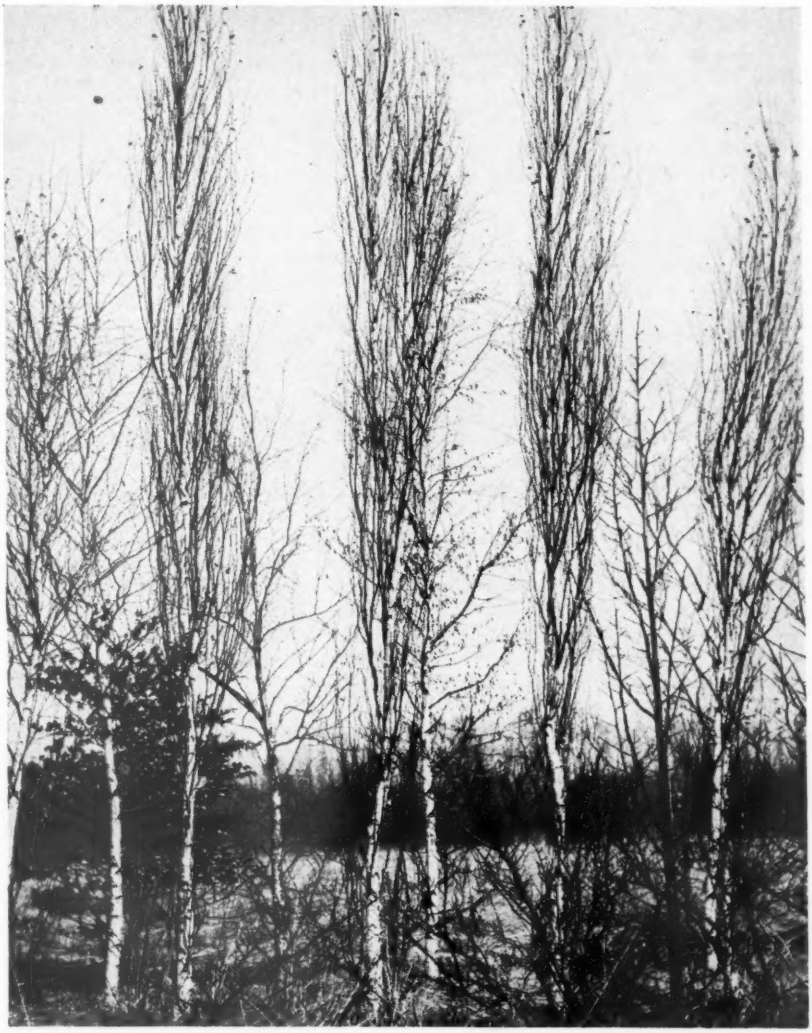
Ohio Short Course for Arborists, Landscape Gardeners and Nurserymen, Neil House, Columbus, Ohio. January 21-23.

Connecticut Tree Protective Association, Stratfield Hotel, Bridgeport, Conn. January 23.

Massachusetts Tree Wardens' and Foresters' Association, Horticultural Hall, Hotel Kenmore, Boston, Mass. February 6-7.

Midwest Chapter, N.S.T.C., Hotel LaSalle, Chicago, Ill. February 13-15.

Upright White Birch



The beauty of the upright White Birch (Betula alba fastigiata) is unsurpassed. Its white trunk and delicate upsweeping branches and dark foliage make it a thing of graceful beauty. This tree deserves much greater recognition for home, park and cemetery landscaping. It should cease to be rare in spite of the borer, which can probably be controlled with a DDT spray application in late June. This picture was taken at The Cole Nursery in Painesville, O.

Factors Affecting Nut-Tree Propagation

By F. L. O'Rourke,
Department of Horticulture
Michigan State College

Propagation of nut trees is primarily involved with the problems affecting the perpetuation of selected clones by vegetative means. It has been indicated by Morris (14), Reed (18) and others that trees produced from seed are of inferior value for nut production. Seed propagation, however, must be practiced to produce the necessary rootstocks upon which the selected varieties are budded or grafted.

Seed Propagation

Barton (1) indicated that while some few seedlings may be produced without seed stratification, after ripening of the seed for 2 to 4 months at 35° to 50°F markedly increased seedling production with hickory and walnut. Chase (4) found that black walnut seed sown in November yielded more and larger seedlings than when planted at a later date. Chase (5) also reported that nuts containing larger kernels produced larger seedlings, and that planting 1 to 2 inches beneath the surface yielded larger seedlings than deeper placement. There has apparently been little or no observations made on the performance of seedlings for rootstock purposes between different parental strains except for Chinese chestnut as reported by McKay (12).

Global Rootstock Propagation

The difficulty of propagating any selection of nut trees by vegetative means has discouraged selections for rootstock purposes. Only filberts offer such an opportunity for selection on somewhat the same basis as the East Malling clones of apple rootstocks which produce different sized scion varieties after grafting. Unfortunately no non-suckering desirable clones of filberts have yet been reported and even the non-suckering Turkish tree hazel is grown from seed when such rootstocks are used (16).

Propagation by Cuttings

Gellatly (7) quoted the success of the East Malling Research Station in England in rooting cuttings of walnuts grown in the greenhouse and reported on his own experience in producing short roots on dormant cuttings of heartnut and Persian walnut. The writer (15) has occasionally produced roots on softwood cuttings of pecan and hickory set in a mist humidified greenhouse but the cuttings did not survive. Mist humidification has been a distinct aid in retaining foliage on softwood cuttings of filbert and Chinese chestnut until roots were formed but unless the axillary buds were developed sufficiently to make new growth immediately thereafter, little or no survival was secured. Apparently when the cuttings were succulent enough to form roots the buds were too immature to put out new shoots. If one waited until the buds were developed the tissue at the base of the cutting was too highly lignified for root formation. The use of synthetic plant hormones on cuttings of nut tree species has been of questionable value.

Propagation by Layers

Mound layers are used quite successfully for the propagation of filbert varieties but have not proven of value with other nut-tree species. Chinese chestnut has been reported to layer easily but experiments with both mound and trench layers of selected varieties of this species at the Glenn Dale, Maryland Station of the U. S. Dept. of Agriculture gave negative results. The writer (15) has occasionally rooted pecan hickory and Chinese chestnut by aerial layering. A marcot box containing sphagnum moss kept moist by a glass wick immersed in water from a bottle at the lower end was employed. The time and labor involved were so great that the experiments were discontinued.

Propagation by Grafting

Bench grafting of walnuts and hickories has been adequately described by Bernath (3), Hardy (8), Lounsberry (10), Slate (24), and others. This method has been tested on a commercial basis and apparently should be considered as one of the most efficient ways to produce nut trees quickly and cheaply in large quantities. Greenhouse and storage facilities are required and keen expert attention must be given the newly-made grafts to assure success.

Reports on top-working and field grafting are both numerous and voluminous. Morris (13), MacDaniels (11), Wilkinson (29), and others have demonstrated the value of cutting back the stock a week or more before setting the scion in order to avoid injury from excess flow of sap. Reed (17), Stoke (27), Morris (14), Shessler (21), Sitton (23), and others have described methods of preparing and setting scions in the stock. All writers agree that greater success is secured when dormant scions are set relatively late in the season. Becker (2) stated that greater success was secured when scions were set from time leaves were full-grown until catkins fell. Protection of the scion by waxes, paper bags, and shading has been advocated by Morris (14), MacDaniels (11), Shelton (20), Shessler (21), and others.

Propagation by Budding

The shield or T bud has not been considered suitable for thick-barked trees such as hickory and walnut due to the difficulty of preventing "air-pockets" beneath the bark. Shaving the edges of the bark at the side of the shield may eliminate this difficulty. Joley (9), reported variable success in shield budding of walnut in California. Patch budding, either by annular method or with the Jones patch-budding tool was described by Reed (17), and is reported by Chase (6), Zarger (30), and others to be the most practical method of propagation with walnuts. Pecans and hickories are commonly patch-budded in summer in commercial nurseries. The thin-barked Chinese chestnut is usually budded by the shield or T-bud method as reported by Hardy (8) and McKay (12).

Scion and Budstick Handling

Sitton (22) reported that two-year wood of black walnut was superior to either older or younger wood. MacDaniels (11) advocated the base of the scion to be in the two-year wood and the tip in the one-year wood.

Shelton (19) reported that scions could be kept until used by storing in a closed container with a small amount of sodium sulphate, commonly known as "Glauber's salt." The usual method of scion storage is to pack in moist but not wet peat or sphagnum moss and place in a refrigerator at about 35°F. Waxes and resins have been used successfully to prevent undue water loss from the plant tissues while in storage.

Waxes and Dressings

Propagators seldom agree in their choice of a wax and wound dressing. In a series of carefully controlled tests, Sitton (23), found that a resin and beeswax mixture with a filler gave superior results with pecans than the so-called "cold waxes" or asphalt emulsions. Paraffin and polyvinyl resin are often used for scion covering and to protect newly set buds. Shelton (20) has indicated certain qualities of a satisfactory wax.

The Rootstock Problem

In the Pacific Northwest Painter (16) stated that Persian walnut varieties on black walnut develop a fatal graft blight due to delayed incompatibility at about 20 years of age. McKay (12) found great differences in survival of buds of Chinese chestnut places on five seedling strains and Hardy (8) suggested that more attention should be paid to the parental relationship of stock and scion in the chestnut. Weschcke (28) reported that black walnuts

(Continued on Page 14)

Hail Injury to Trees

By David H. Marsden,
Shade Tree Laboratories,
University of Massachusetts

Hail storms are not an unusual occurrence, and the Connecticut River Valley in New England, region of fertile tobacco lands, would seem to have more than its share of the icy stone falls each summer. The storm which struck the city of Holyoke, Massachusetts briefly but violently on June 17, 1951, however, was one not often equalled.

As is frequently true of these bold manifestations of nature's whim the storm was localized; only about a half-mile square area of finer residential district received full brunt of the fury. For an hour or so the heavens let loose with torrential rain, lightning bolts and thunder claps, and bombardments of hail stones the size of walnuts. The fusilades of hail, which soon covered the ground like a carpet of snow, ruined awnings, pierced convertible car tops, and sent pedestrians scurrying for quick cover.

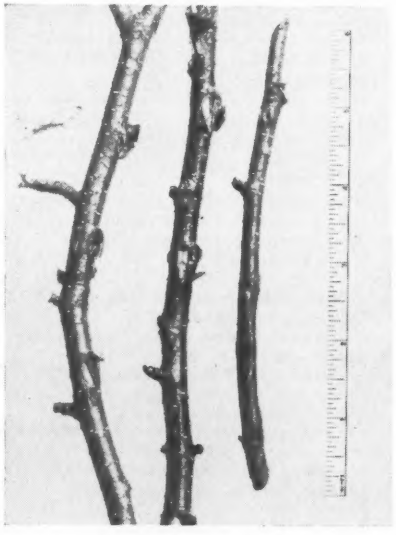
Jim Landers, of the Board of Public Works of Holyoke, described the effect of the storm on trees and shrubs as almost unbelievable. Shade trees were virtually stripped naked of their lush foliage; the ground beneath covered inches deep with a mat of shredded green leaves. Faced with the task of disposing of the premature accumulation of fallen leaves, city officials permitted residents to rake the debris into the streets where it was picked up and removed with snow-removal equipment.

The lost foliage was replaced quickly enough. Within a month the shade trees had regained their modesty with adequate, though less luxurious, cloaks of leaves. The fresh, green crowns were amply spangled with tattered, brown leaves, but this was the only conspicuous sign of their recent lashing by hail. Splotches of brown foliage were particularly noticeable on coniferous shrubs, which at the time of the storm had not suffered loss of their leaves as had the deciduous trees.

Closer inspection of the trees and shrubs, however, revealed that the hail stones had wreaked a more lasting damage than might first have been supposed. The upper sides of branches were pock-marked with wounds made by the hail. On hemlock, yew, spruce, and white cedar the wounds were irregular in outline and showed no signs of healing. Instead the bark was dryed and peeling back from the original injury; smaller branches were girdled in several places.

(Continued on Page 18)

Fallen leaves from the hailstorm that struck Holyoke, Mass., June 17, 1951



Hail injury to Birch.

Hail injury to Norway Maple. Note healing wounds.

Recommended Street Trees for Northern California

By Ray D. Hartman,
Leonard Coates Nurseries, San Jose

The thinking of tree specialists regarding the most satisfactory kinds of street trees to meet current changing requirements has been undergoing a marked change in recent years. This has been due largely to (1) the rapid growth of urban areas, (2) changing conditions such as increased traffic hazards and modern architecture, and (3) increased knowledge of the suitability or unsuitability of certain trees for streetside planting. List of recommended trees which governed street tree planting programs in some western cities 25 years ago, or even as recently as 10 years ago, are now almost obsolete. Under these circumstances it would appear that we should be continuously taking stock of our street tree problem with a view to making necessary revisions in our recommended lists as occasion demands.

After many years of thought and discussion on the matter of suitable trees for streetside planting, it is our belief that there is no such thing as a perfect street tree. Regardless of how desirable a tree may appear to be, it will have some disadvantages and will not fit all conditions. The matter of personal opinion also enters strongly into the rating of a tree, and horticulturists are rarely in full agreement.

In making street tree selections, it should be borne in mind that the trend today in communities throughout the nation is toward smaller or more upright trees. Other complicating factors governing the choice of a street tree for a given neighborhood are width of parkway, width of street, kind and volume of traffic, overhead clearance of utilities, quality of soil, exposure, building setback, preference of local residents, cost of maintenance, etc.

The following 60 species, which seem to satisfy current street tree requirements, have been placed in three groups according to general adaptability. In the first group are those recommended for general use without reservation; in the second group are those suitable for certain conditions or for restricted areas; and in the third group are those that seem to be desirable but that need additional testing.

It is obvious that no tree will give satisfaction unless carefully planted and properly maintained.

This list was prepared for the California Horticultural Council primarily to stimulate further thinking on the subject. From time to time we hope to revise the list and to give additional information as to character of tree, soil requirements, climatic preference, advantages and disadvantages, susceptibility or diseases, etc. The suggestions and assistance of all those concerned with street trees will be appreciated.

FULLY RECOMMENDED

Betula pendula (alba), European White Birch.
Cinnamomum Camphora, Camphor.
Crataegus Lavallei, Hawthorn.
C. phaenopyrum (cordata), Washington Hawthorn.
Fraxinus velutina glabra, Modesto Ash.
Ginkgo biloba (male), Maidenhair Tree.
Liquidambar Styraciflua, Sweet Gum
Magnolia Grandiflora, Southern Magnolia.
Platanus acerifolia, London Plane.
Prunus Blireiana, Purpleleaf Flowering Plum.
Quercus agrifolia, Coast Live Oak.

RECOMMENDED WITH LIMITATIONS

Acer platanoides, Norway Maple.
A. platanoides Schwedleri, Red Norway Maple.
Betula pendula dalecarlica, Cutleaf Weeping Birch.
Ceratonia Siliqua, Carob.
Crataegus Oxyacantha Paulii, Paul's Scarlet Hawthorn.
Crinodendron dependens, Lily of the Valley Tree.
Eucalyptus polyanthemos, Red Box.
Koelreuteria paniculata, Goldenrain Tree.
Ligustrum japonicum, Japanese Privet.
Liriodendron Tulipifera, Tulip Tree.
Morus "Kingan Fruitless," Kingan Mulberry.
Morus "Stribling Fruitless," Stribling Mulberry.
Olea europaea, Olive
Platanus occidentalis, American Sycamore.
Platanus racemosa, Western Sycamore.
Pistacia chinensis, Chinese Pistachio.
Prunus Pissardii, Purpleleaf Plum.
Quercus Ilex, Holly Oak.
Quercus palustris, Pin Oak.
Quercus Suber, Cork Oak.
Robinia Pseudoacacia, Black Locust.
R. Pseudoacacia Decaisneana, Pink Flowering Locust.
Sorbus Aucuparia, European Mountain Ash.
Tilia cordata, Littleleaf Linden.
U. parvifolia sempervirens, Evergreen Chinese Elm.

APPEAR TO BE DESIRABLE BUT NEED FURTHER TESTING

Acer palmatum, Japanese Maple.
Aesculus carnea Briotii, Red Horse Chestnut.
Albizzia Julibrissin rosea, Silk Tree.
Celtis australis, Hackberry.
Crataegus "Autumn Glory," Autumn Glory Hawthorn.
Fraxinus Uhdei, Shamel Ash.
Hakea laurina, Sea Urchin.
Lagerstroemia indica, Crape Myrtle.
Lagunaria Patersonii, Queensland Pyramid Tree.
Maytenus Boaria, Mayten.
Prunus ilicifolia, Hollyleaf Cherry.
Prunus Lyonii, Catalina Cherry.
Robinia hispida macrophylla, Rose Acacia.
Tilia europaea, European Linden.
Zelkova serrata, Japanese Keaki.

A FEW NEW TREES AND OTHERS WORTHY OF GREATER USE

By Maunsell Van Rensselaer,
Saratoga Experimental Gardens

Acer Buergerianum. Not a new tree, but one that has demonstrated its usefulness as a streetside tree in Palo Alto. Ray Hartman has a beautiful specimen in his garden.

Acer oblongum. Evergreen Maple. Now well established in Santa Barbara, but should do better here. Information regarding location of good specimens in the Bay region would be appreciated.

Acer saccharum monumentale. Frank Anderson has a fine specimen in Burlingame which should be propagated and distributed.

Acer platanoides. Crimson King Maple. Plant patent 735. Information regarding location of specimens here would be appreciated.

Aesculus carnea Briotii. Has been known here for some years, but not planted as widely as it deserves to be.

Arbutus canariensis. Evergreen. Eric Walther believes this species has promise as a streetside tree. Fine specimens in Strybing Arboretum.

Broussonetia papyrifera. Deciduous. One of a list of trees recommended for streetside planting in Fresno. Commonly planted as a street tree on the eastern coast according to L. H. Bailey. Information regarding location of good specimens here would be appreciated. Seedlings are thriving at Saratoga.

Carpinus Betulus fastigiata. Said to do well in Los Angeles County; should do better here. Albert Wilson lists one of the typical forms, not the upright form, in Hillsborough.

Carpinus caroliniana. One of a list of trees recommended for streetside planting in Oakland. Lynn Harriss believes it has great promise for the Bay region.

Cinnamomum glanduliferum. Vigorous young trees propagated by George Hood have a very attractive appearance, and seem to have great promise.

Cladrastis lutea. Medium-sized deciduous tree with fragrant white flowers. Albert Wilson reports a good specimen on Stanford Campus.

Corynocarpus laevigata. Glossy evergreen foliage. Not a new tree, but one that should be planted more in coastal communities of central California. Does well in Strybing Arboretum, San Francisco.

Crinodendron dependens. Small evergreen tree. Not a new tree, but one destined to be more widely used. Popular in Palo Alto, Santa Barbara, and elsewhere. Listed and recommended by Leonard Coates Nurseries. *Crinodendron Patagua* is growing successfully in Strybing Arboretum, San Francisco.

Celtis yunnanensis. Willard Hagen reports this to be rated as China's best small streetside tree. Partially evergreen. Hagen lists it. *Celtis australis*, which is so successfully used as a streetside tree in Palo Alto, should be more widely planted.

Firmiana simplex. Medium-sized, deciduous, hardy tree. Fine specimens in Santa Barbara. Information regarding the location of good specimens here would be appreciated.

Fraxinus malacophylla septentrionalis. Exceptionally beautiful foliage. Now being tested in Santa Barbara, but will probably do better farther north. Are there any

(Continued on Page 21)

Plant Propagators Guild Is Formed

Somehow or other one cannot escape the thought that history was made at the recent organizational meeting of Plant Propagators held in Cleveland Nov. 8 and 9th.

An enthusiastic group of 75 nurserymen, scientists, arborists and public officials, gathered from Massachusetts to Iowa and Missouri, met to listen to some highly qualified speakers discuss various phases of the nebulous science of plant propagation, and then to discuss among themselves the feasibility of forming a permanent, separate organization. One hour after the completion of the first paper, read by Dr. Roger U. Swingle of the U. S. Dept. of Agriculture, in the absence of the author Professor Forrest Strong of Michigan State College, it was necessary for the chairman, Edward H. Scanlon, to halt the discussion. This spirited discussion of Mr. Strongs paper, "Problems in the Control of Damping-off Tree Seedlings," very definitely and conclusively set the pattern for the remainder of the session which was marked by the very healthy questioning participated in by a large majority of those present.

A talk on the order of a keynote address was given by Mr. James S. Wells of the Koster Nursery, Bridgeton, N. J. Mr. Wells title "The Plant Propagator —Basis of Our Industry" outlined a high standard of membership and steps by which membership could be attained. The theme stressed the point of craftsmanship and set this quality as the requisite for the highest honor within the organization. The Guild form of organization was recommended.

The remaining papers give by Professor F. L. O'Rourke, Michigan State College, "The Effect of Juvenility in Plant Propagation," "A General Review of Woody Plant Propagation," by Richard H. Fillmore, the Arnold Arboretum; 3rd dimension color slides on "The New Trend in Shade Tree Selections by Edward H. Scanlon Commissioner of Shade Trees, Cleveland, and "Controlled Humidification As An Aid To Vegetative Propagation," by Dr. L. C. Chadwick Ohio State University, were all highly instructive papers. Each evoked long periods of questioning and showed a definite hunger for knowledge in this field where so much vagueness exists.

A committee was appointed, on suggestion from the floor, by the temporary chairman, Edward H. Scanlon, to meet after the first evening dinner to formulate a tentative program. This committee was composed of three scientists; Dr. L. C. Chadwick, Ohio State University; Professor F. L. O'Rourke, Michigan State College, Professor Roger Pease, West Virginia University: three nurserymen, John Siebenthaler, Siebenthaler Nursery, Dayton, Ohio; James I. E. Ilgenfritz, Ilgenfritz Nursery, Monroe, Mich., and James S. Wells, Koster Nursery, Bridgeton, N. J.; three propagators, Richard H. Fillmore, the Arnold Arboretum; Roy Nordine, the Morton Arboretum, and Peter Zorg, Fairview Nursery, Erie, Pa. Dr. William Snyder of Cornell University was named to succeed Mr. O'Rourke who said he would be unable to serve during the next year. This committee held a five hour session and drew up a tentative constitution. In this session they were ably assisted by Mrs. Richard Fenecchia of Rochester, N. Y. who generously gave up her evening to record the proceedings.

The tentative constitution was freely discussed the following day and it was finally voted to ask the committee to continue for a year and to report at a meeting to be held in December of 1952.

There is little question in the minds of any who attended that an organization of great potential good to horticulture will come out of this very enthusiastic organizational meeting. The proceedings will be published and anyone interested in obtaining a copy should immediately contact the temporary chairman, Edward H. Scanlon, TREES Magazine, Box 5607, Cleveland, Ohio, so that sufficient copies can be printed.

Organization committee of the Plant Propagators' Guild. Top row, left to right: Roger Pease, West Virginia University; Peter G. Zorg, Fairview Nursery, Fairview, Pa.; John Siebenthaler, the Siebenthaler Co., Dayton, Ohio; Dr. William E. Snyder, Cornell University; Roy M. Nordine, the Morton Arboretum; F. L. O'Rourke, Michigan State College. Bottom row, left to right: James S. Wells, Koster Nursery, Bridgeton, N. J.; Dr. L. C. Chadwick, Ohio State University; Edward H. Scanlon (temporary chairman) Commissioner of Shade Trees, Cleveland, Ohio; James I. E. Ilgenfritz, Ilgenfritz Nursery, Monroe, Mich.; Richard H. Fillmore, the Arnold Arboretum.

The Arborists Clinic

Winter Storage Preparation of Spraying Equipment

By Clifton W. Dick
The Hardie Mfg. Co.

The spray pump is a rugged, finely machined piece of equipment. This rugged piece of machinery, pumps and circulates, under high pressures, one of the largest assortments of vitriolic, corrosive liquids of any modern machine. Naturally this pump takes a terrific beating when in operation. Pressures on connecting rod or plunger drive bearings become as high as 7,500 pounds on each bearing. This thrust or pressure is exerted as often as 150 times per minute. Each valve ball is hammered onto its seat at a thrust of 1,200 pounds at a rate of 150 times per minute. This is hard heavy work, even with proper lubrication and care. Without proper care and lubrication, wear becomes excessive and repair costs begin to mount.

The sprayer and high pressure pump can be compared to an automobile. Early every fall the automotive dealers and service stations urge and recommend a planned winterizing campaign. This assures the maximum of service during the coming winter months. The same type of winterizing plan should be applied to spraying equipment. This would insure dependability and longer spray pump life.

The following suggested plan is aimed at eliminating the usual trouble encountered when starting in the spring.

Tanks

All agitator bearings and packing glands should be fully lubricated upon fall storage.

Steel tanks should be cleaned internally with a wire brush, then painted with an acid resistant or rust preventing paint.

Many authorities recommend 3 to 4 inches of water in the bottom of wood tanks, this eliminates "drying out." In this instance the agitator paddles must be in horizontal position, not to remain in the water.

Engine

Drain radiator completely or fill with anti-freeze. After draining, run engine a few minutes to remove all water in block and head.

Drain fuel tank to prevent condensation. It also may be a good policy to drain crankcase to remove sludge and moisture which might have harmful effect on bearing surfaces.

The application of a valve lubricant to the upper part of the engine could prevent valves from sticking. This would insure easier starting in the spring.

Pump "Important"

Run 2 to 3 gallons of spray oil or crankcase oil through the pump under pressure. This will lubricate all valve balls, plunger cups or packings, etc. This will practically guarantee trouble free starting in the spring.

Open all drain plugs in pump and in suction and overflow lines. Open discharge valves.

Run pump for a few minutes to eliminate all excess oil and air pockets in pump.

Remove suction line strainer screen. Immersion in oil will prevent corrosion.

Hose and Guns or Nozzles

All hose should be drained and rolled or placed on reels. Fittings or couplings should be oiled. Gun parts should be removed and placed in oil to prevent corrosion.

City Lumbering Is Profitable

By Paul L. Sandahl,
Supt. of Parks,
Des Moines, Iowa

In the March-April issue of TREES Magazine was an article entitled "Few Tree Removals Produce Wood Worth Salvaging." Contrary to this statement we have found that this lumber *is* very valuable.

Since 1928 we have made it a point each year to save all logs which might be valuable for lumber. These logs came from trees removed from our parks and cemeteries or from the streets. They were stock piled and then every second or third year or so we hired a portable sawmill to come in and process the logs.

In 1948 we were able to convince the Park Board and the City Council that it would be more economical for us to do the sawing ourselves if we could have a mill. An item of $2500 was included in the 1949 budget for the purchase of a mill. It was installed and a shed was constructed over it sawed by the mill itself. At that time, approximately 43,000 board feet of lumber were sawed. More than that has been prepared this year (1951) and it looks as though we may run as high as 60,000 feet. This lumber includes cottonwood, elm, oak, ash, hackberry, walnut, cherry and maple. In addition to this we got lots of fence posts and hundreds of parking posts, besides hundreds of loads of stove wood and kindling for the Parks stoves.

During all these years we have never sold a single stick of lumber but have used it all in this department in projects from cottonwood pads for moving heavy machinery on sand to picnic tables and chairs of walnut, as well as a very fine walnut table of "turned" design. We make laminated portable floors for skating rink shelter houses out of elm, we make swing seats and bench slats out of oak, we make shelving out of all kinds, besides the unnumbered items of repair and new construction. You may get some idea of the many uses for such lumber when you know that we keep two good carpenters covered up with work the year round. We buy commercially such items as long lengths, stringers, joists, etc., as well as special siding and flooring, because our native lumber does not produce long lengths. One time, one of our carpenters, after running a board of native lumber through the planer, had to discard that board because of some flaw and get another, vehemently threw the bad one on the floor and in Norwegian dialect said: "*** ! ? %***(*), I have been here eight months and never seen a piece of new lumber!" But he was a good enough carpenter that he would not use anything that was not good enough for the place.

It is a fact that a dead tree does not produce as good quality lumber as a live one, but here is where good judgment enters into the picture to the best advantage in the selection of boards for individual places. We have found that

(Continued on Page 18)

CHEMICAL BRUSH CONTROL

gets results like *this!*

One year after spraying with Esteron Brush Killer.

During the past year, the roadside area in the foreground received one application of Esteron Brush Killer. Usually a single treatment in any one year is sufficient for effective woody plant control. No wonder the conclusion reached by highway engineers in all sections of the country is—chemical brush control simplifies maintenance and cuts costs!

Proper application is the key to good results. Dow, a pioneer in the development of chemical weed, brush and grass killers, offers three time-proved methods for year-around vegetation control on right-of-ways:

Foliage Treatment. Esteron Brush Killer, a mixture of low-volatility esters of 2,4,5-T and 2,4-D, is effective on most species of mixed woody plants and weeds found along right-of-ways. Also Esteron 245, containing low-volatility esters of 2,4,5-T, controls brush and resprouting when applied to foliage.

Stump Treatment. For tall brush and trees, it often is best to cut close to the ground and spray stumps and stubs with Esteron 245 or Esteron Brush Killer diluted in oil. Either product, applied to freshly cut stumps, can be effective any month in the year for controlling resprouting.

Basal Bark Spraying. All species of woody plants respond to basal bark treatment with Esteron 245. Esteron Brush Killer is also effective. Spraying the basal 12 to 18 inches above the ground line with either product in oil at recommended concentrations may be done at any time, including the winter months, and may be done as a supplement to your regular spraying program. Your inquiries are invited. Dow sales and technical men are available for consultation and assistance. Contact your nearest Dow sales office.

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The Armstrong Maple

This splendid fastigiate form of Acer rubrum promises to become a beautiful and durable substitute for the ill-fated and short-lived Lombardy poplar. It has none of the Lombardy's bad habits or drawbacks and all of its beauty. This tree was discovered four years ago by Newton Armstrong, well known arborist of Windsor, Ohio. Newt donated the tree to the Cleveland Division of Shade Trees to whose grounds it was moved and is growing beautifully. The Armstrong Maple is one of the selections of the National Shade Tree Conference Shade Tree Selection Committee. It is being propagated by a west coast nursery.

Forest Tree Selection Program

Our forests may some day be populated with super-trees if investigations now under way by forest research agencies in the South prove successful. According to an announcement by Willis M. Baker, director of TVA's Division of Forestry Relations, TVA has joined in the search for superior strains of forest trees and now has selection and propagation studies under way.

TVA has long been interested in the improvement of tree crop species; that is, those trees that bear an edible crop of nuts or other fruits. Improved varieties of black walnut are being tested in 107 variety test plantings throughout the Tennessee Valley, and Thomas walnut—one of the most promising varieties—has been planted experimentally on over 3,000 Valley farms. Similar work is being done on blight-resistant chestnut, filbert, and pecan.

But little has been done to improve the southern pines, the principal species used in the vast reforestation program now under way in the South. The number of seedlings planted each year now averages 200 million, and more and more are being requested each year.

TVA's two forest tree nurseries produce about 20 million pine seedlings a year. As a first step toward developing better seedlings, it is planned to search the nursery seed beds each year for super-seedlings—those that stand head and shoulders above the mass. In each of the next five years foresters will select loblolly, shortleaf, and white pine super-seedlings at the rate of one for every 200,000 seedlings produced. These will be planted in special test plots along with a certain number of "average" seedlings, which will serve as checks. All super-seedlings will be evaluated at five years and again at ten years. Any that do not continue to show superiority will be removed from the test plots, as will also check trees that fall below the average in growth.

Similar measurements and ratings will be carried out at 15 years and again at 20 years. By that time possible one-fifth of the super-seedlings will remain—the very best ones from the standpoint of growth. Each will then represent one in a million in terms of total seedling production over a five-year period. These will be available for seed production, grafting, and breeding experiment.

This study by TVA is part of a southern forest genetics research project being sponsored jointly by public and private research agencies. Coordination is provided by an Advisory Committee on Forest Tree Improvement.

Chairman of the Committee is Carl Ostrom, Southeastern Forest Experiment Station.

Richmond, Va.'s Tornado 6/13/51

July 1, 1950 (the start of our fiscal year) was calm enough, but on the 4th of July we had a wind storm, thunder, lightning and fireworks that did some damage to our trees. Since then we have had several storms, some mild and some that we thought were severe, but on June 13, 1951, at about 4 p. m., Aeolus gave us the works. A hurricane piled things up for a three and a half mile long and one thousand feet wide strip through the heavy wooded section of the city. Byrd and Monroe Parks were hit hard with practically all of the very large trees either twisted off or levelled to the ground. Small trees were untouched and nobody killed. The storm kept high, roofs and sometimes sides of houses were completely demolished. All city forces were called out and many commercial firms supplied men and heavy equipment. Van was not long in getting on the job.

Mr. J. M. Pace, Chief of Bureau of Parks, was mobilizer and did an excellent job. Everything is pretty well cleared up now but we expect to encounter secondary damage all summer.

The estimated value of trees lost is $85,000, (conservative). Total damage $1,000,000.

Kibitzers became tree experts as if by magic, and until they ran out of gas, we will receive much advice without cost—unless it is followed.

This is a city of beautiful trees, everybody loves them except taxpayers and the budget personnel, but whoever saw cider without gnats in it?

The Jap beetles have been very considerate this year. We have been too busy to greet them, they are now just beginning to swarm in on us in the last few days. Starting Monday we will hit them again.

Our Elms and Oaks could look better, but perhaps never will as long as 2.4 D. can be handled by anyone.

I was borne down here eight years ago on the wings of a storm (January 29, 1943 Ice Storm). Since then much advice by good men has been given for which I am thankful, but two of the scientists have been here on the scene and contributed suggestions that were followed where possible. I hope they and others will call on me this year, as I believe that no matter how many disasters you follow up, something new will always crop up while watching after effects. The prof's I refer to are Drs. P. Tilford and C. May, a pair of aces that are hard to beat.

Yours truly,

M. W. French,
City Arborist.

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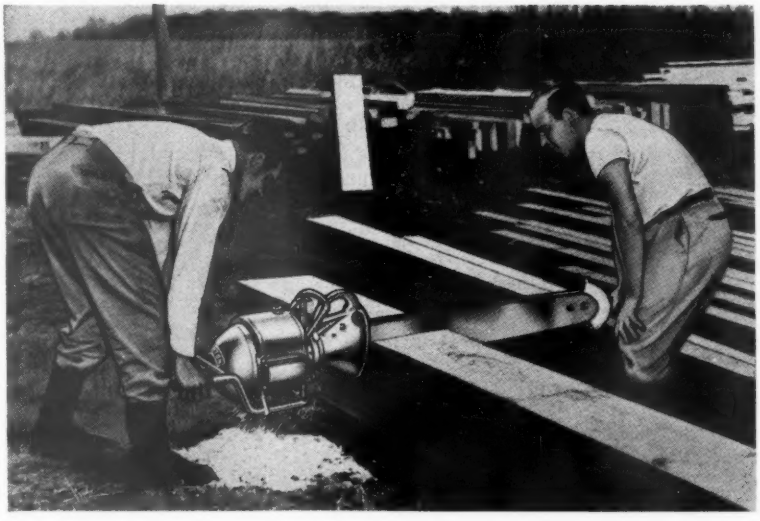

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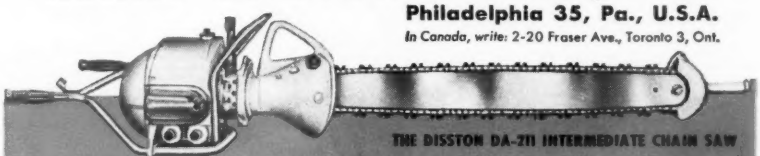

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Nut Propagation

(Continued from Page 6)

grafted on butternuts yielded poor crops and that bitternut was a satisfactory stock for shagbark varieties and shagbark hybrids. Smith (25) advocated shagbark stocks for shagbark varieties but found bitternut to be practically as good. Stoke (26), and Smith (25) found black walnut to be the best stock for all walnut varieties, including heartnuts and butternuts.

Nursery Practices

Commercial Nurseries have adopted various methods to discourage the normal tap-rooting habit of nut trees and stimulate lateral and fibrous root production. Planting seed over screen wire, undercutting the seedling each year in the nursery row, frequent transplanting, and root pruning are methods commonly used. Attention must be given to the production of an adequate root system to help the grafted tree withstand the shock of transplanting to its permanent location.

Summary

The chief obstacle to the large-scale growing of selected nut varieties is the difficulty in propagation. Careful workers with a background of knowledge and experience and skilled in craftsmanship are successful in a limited way. Quantity production is apparently dependent upon specialized facilities and efficient labor programs. The need for extensive rootstock research is keenly felt by growers of walnut, hickory, and chestnut.

Factors Affecting Nut Tree Propagation

I. Production of Rootstocks
  A. Seedling
    1. Parental strain
    2. Grading and selecting seed
    3. Storage of seed
    4. Stratification
    5. Germination Problems
    6. After-care
  B. Clonal
    1. Selection
    2. Propagation

II. Vegetative Propagation of Nut Tree Clones
  A. Cuttings
    1. Factors involved
      a—Anatomical
      b—Physiological
      c—Environmental
  B. Layers
    1. Methods
      a—Trench
      b—Mound
      c—Aerial
  C. Graftage
    1. Scion grafting
      a—Methods
        (1) Bench
          (a) Whip and tongue
          (b) Other
          (c) Handling
        (2) Top-working (field)
          (a) Bark slot
          (b) Cleft
          (c) Stoke
          (d) Other
          (e) After-care
    2. Budding
      a—Methods
        (1) Patch
        (2) Shield or T
        (3) Other
        (4) After-care
    3. Scion and/or Budstick Handling
      a—Type of wood
      b—Storage
      c—Accessory substances
    4. Waxes and Dressings
      a—Hard waxes
      b—Asphalt emulsions
    5. Rootstock Factors
    6. Nursery Practice
      a—Culture
      b—Digging, grading, and storage
      c—Packing and shipping

(Continued on Page 16)

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Nut Trees

(Continued from Page 14)

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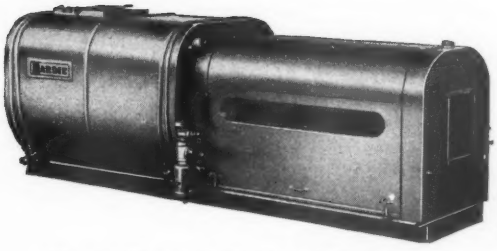

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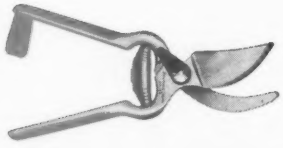

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Hail Injury

(Continued from Page 7)

Woody parts of deciduous trees had been injured similarly. Branches up to an inch in diameter received multiple injuries topside. Here, however, the condition of the wounds a month after the storm was varied. Those on the paper-barked white birch were jagged and peeling like those on conifers; little or no healing had taken place. Wounds on the Norway maple were comparatively large and elliptical, looking like they had been bark traced, and a healthy callus had already developed.

Hail injury to Japanese Yew.

The long term effect of the hail stone damage to these trees and shrubs remains to be observed. The ragged tears on the conifers will undoubtedly result in death for many smaller branches by girdling. In addition, it is possible that the numerous bark penetrations on some trees may become infection courts for disease-causing fungi.

City Lumbering

(Continued from Page 10)

proper curing of this lumber lifts it out of the mediocre classification to that of first class lumber. This fact was proved by the results which came from sending our sawyer to a Lumber Mill Short Course held at the Department of Agriculture Forestry Exhibit at Madison, Wisconsin, by several State College Extension Departments in October, 1949.

After making plenty of allowance for any sub-standard quality or condition of this native lumber, we are convinced beyond any doubt of its high value in many, many ways, even from the financial viewpoint.

Radio Center Gets Trees

New York—Three honey locust trees 50 feet high will soon be planted on the Fifth Ave. side of Rockefeller Center to replace the three elms that found city life too tough.

The trees, each weighing more than five tons, were brought here from New Jersey by truck and trailer. Ten-foot balls of earth protected the roots.

The honey locust tree is believed by horticulturalists to be the best qualified tree to replace the disease-ridden American elms. The honey locust tree branches out in a wide, graceful shape and is relatively free of pests and disease.

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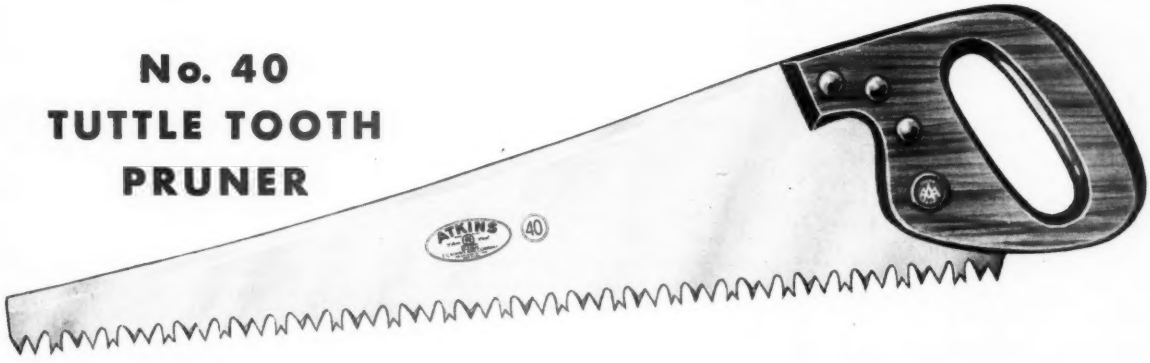

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Trees...

NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

Tree-care services were exempted from price control on September 19, 1951, by General Overriding Regulation 14, amendment 2. "This amendment exempts from all ceiling regulations imposed by the Office of Price Stabilization, certain services which have minor significance and slight effect upon the cost of living or services which cannot be practically controlled." Among the services exempted were—"Tree Surgery Services."

Previous to this exemption, tree-care services were covered by the General Ceiling Price Regulation and the maximum price which could legally be charged for such services was the highest price charged during the base period December 19, 1950 to January 25, 1951.

Soon after the general price freeze went into effect the National Arborist Association filed a petition with the Office of Price Stabilization requesting exemption for tree-care services. The request was made on the grounds that prices for such services were not inflationary, were not a cost-of-living item and could not be practicably controlled since each job was essentially tailor-made, often necessitating a price applicable only to the particular job. At about the same time The American Association of Nurserymen asked for exemption from price control for nursery stock and the planting or installation of such stock.

On March 26, amendment 8 to the General Ceiling Price Regulation was issued exempting floral products and nursery stock from the price freeze.

On July 19 General Overriding Regulation 14 was issued and among the exemptions were "Trimming of hedges and cutting and maintenance of lawns" and "Nurserymen rendering landscape services in connection with a sale of an exempt commodity."

On September 19, General Overriding Regulation 14, amendment 2 exempted "Tree Surgery Services."

What we know about oak wilt can be summarized as follows:

1. What is now known as oak wilt was discovered in southern Wisconsin in about 1929. Then it was known only as a dying of oak trees. The name "Oak Wilt" was applied later.

2. Oak wilt at present is known to occur in Wisconsin, Illinois, Iowa, Missouri, Minnesota, Nebraska, Arkansas, Kansas, Ohio, Indiana, Pennsylvania, Michigan, West Virginia, Tennessee, North Carolina and Maryland. Undoubtedly it will be found in many other states. It is not known if the disease is new in much of the area where it now occurs, or if it has been present for a long time and has just recently been found.

3. Oak wilt is viewed with enough seriousness by oak lumber industries so that they are raising considerable funds to help finance research on the disease. Research projects on different phases of the oak wilt problem are being carried on by the U. S. Department of Agriculture and many State Agricultural Experiment Stations.

4. It is caused by a fungus parasite named *Chalara quercina.*

5. All species of oaks so far tested have proved susceptible. The fungus also has been found on chestnut.

6. On red and black oaks the first symptom is a slight curling and dull paling of older leaves near the top of the tree or the tips of lateral branches. Leaves gradually turn bronze color to brown progressively from top or margins toward the base. The affected leaves soon fall, although complete defoliation does not always occur rapidly. Often sucker growth develops on the trunk and large branches. There may be brown streaking in the outer annual wood ring. The tree may die the first year or leaf out partially the second year and then soon die.

7. On white and burr oaks, twigs with dead and dying leaves often are scattered throughout the crown. Symptom development is slow in these trees and they may survive for several years. Dieback of the upper branches causes a "stagheaded" appearance.

8. Oak wilt spreads from one tree to another nearby tree of the same species through natural root grafts. How it spreads longer distances where root grafts are not involved is not known.

9. Trenching around diseased trees to break root connections with nearby oaks of the same species has stopped the spread through the roots from one tree to another. In oak plantings further spread has been stopped by poisoning a ring of trees around the point of original infection. In some experiments the disease has been checked, apparently now for several years, by the prompt removal of diseased trees. In the white oak group it is sometimes possible, when the disease is identified in its early stages, to eliminate it from a tree by pruning out all affected branches.

10. At this time there is not sufficient evidence to judge how serious oak wilt finally may become. It *has* become serious in some locations. In the writer's opinion there is plenty of reason for alarm but not for hysteria. *I would continue planting oak trees.*

Dear Editor:

Regarding your comment on "Trees For Iceland" in the July-August issue. I'm not too well acquainted with the climate of Iceland, but I believe it might be possible for Eucalyptus to grow there. I once saw a species of Eucalyptus at Kew Gardens in England, where the climate is not too dissimilar from that of Iceland. From our Encyclopedia Americana I find that one species, *E. viminalis,* can survive temperatures below 20° F. and that the mean temperature in Reykjavik, Iceland, is 39.4° F with cool summers and warm winters. While a species of Eucalyptus might exist in Icleand it is difficult to believe that it would thrive.

P. S.—Just ran across a beautiful *Goldenrain Tree* in North Muskegon. It is located on a bluff overlooking Muskegon Lake and the owner reports it didn't lose a branch in last winter's 17° below weather. The tree is about 20 feet high and 12 inches dbh. Another exotic I noticed almost in downtown Muskegon was a *Royal Paulownia.* It was about 25 feet high and had some deadwood in it. However, the tree has been neglected and it would be difficult to tell if the deadwood was caused by the cold or from other environment conditions. Isn't this about as far North as these two species may be encountered?

Wm. S. Brenneman,
Muskegon Heights, Mich.

* * * *

Editor's Note: Eucalyptus will not stand sustained temperatures below freezing — maybe a fast dip and rise from 20°; they are sub-tropical species and need long periods of hot temperatures. I would like to have some seed from that Goldenrain.

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Northern Cal. Trees

(Continued from Page 8)

specimens in the Bay region? Arnold Arboretum is sending fresh seeds to Saratoga Experimental Gardens.

Fraxinus Paxiana. Listed and highly recommended by W. B. Clarke. Information regarding location of good specimens would be appreciated.

Fraxinus Uhdei. Brought from Mexico a few years ago by A. D. Shamel and now being tested in many parts of California. Is there a full grown specimen in this region? The Modesto and Montebello varieties are still in the testing stage in some communities.

Ginkgo biloba fastigiata. Specimens of the Fairmount Park Tree in Philadelphia, and of Ohio's best fastigiate tree were propagated at Saratoga this summer from buds and cuttings. Buds from the Ohio tree were sent by E. H. Scanlon. We also have rooted cuttings of *G. biloba pendula* from the Los Angeles State and County Arboretum (Lucky Baldwin Estate), and of *G. biloba umbraculifera* from an umbrella-shaped tree in Santa Cruz. We are also propagating from a male tree which is reported to lose its leaves about a month later than the normal tree.

Gleditsia triacanthos inermis. Moraine Locust. Plant patent 836. Information regarding location of specimens here would be appreciated. Mr. John Siebenthaler, who developed this variety, is sending specimens to Saratoga this winter.

Gymnocladus dioica. Kentucky Coffee Tree. Large, deciduous tree having very large bipinnate leaves. Not a new tree, but more could be planted to advantage where large graceful specimens are needed.

Hakea laurina. Small evergreen tree. Palo Alto and other cities are now giving this species a thorough test as a streetside tree.

Hoheria populnea. Not a new tree, but Eric Walther believes it should be more widely planted.

Idesia polycarpa. Deciduous. Information regarding location of specimens would be appreciated. Now being tested at Saratoga.

Juniperus scopulorum. Gray Gleam Rocky Mountain Juniper. Plant patent 848. Two specimens sent to Saratoga by Scott Wilmore of Denver, Colorado, appear to be thriving.

Koelreuteria paniculata. Small deciduous tree bearing yellow flowers. Not a new tree but one worthy of greater use, especially on streetsides. "One of the finest, most beautiful, all-around street trees we know of." E. H. Scanlon.

Libocedrus decurrens columnaris. In the Hoyt Arboretum in Portland, Oregon, there is a grove of singularly beautiful incense cedars with tall narrow crowns. Do we have this form in the Bay Region?

Maytenus Boaria. Small evergreen tree. Not a new species, but one that is being highly praised at the present time by several landscape architects of the Bay region.

Metasequoia glyptostroboides. Dawn Redwood. Frank Anderson reports considerable seedling variation in this new tree, so we should be looking for the best horticultural forms.

Metrosideros robusta. Eric Walther recommends this tree for wider use. Fine specimen in Strybing Arboretum.

Phellodendron amurense. Medium-sized deciduous tree. Used as a streetside tree in Cleveland, Ohio. Should do especially well in central and northern California. Are there good specimens in the Bay region?

Pinus patula. Medium-sized tree, notable for its long pendulous needles. Fine specimens at University of California Botanical Garden, Berkeley. Now being put into production at Saratoga.

Podocarpus gracilior. Medium-sized evergreen tree. Not a new tree, but deserving of greater use.

Pterocarya stenoptera. Chinese Wing-Nut. Deciduous. Not a new tree, but deserving of greater use. Listed and recommended by Leonard Coates Nurseries.

Quillaja Saponaria. Small evergreen tree from Chile. Thrives in this region. Should be tested as a streetside tree.

Rhamnus Alaternus. Small upright evergreen tree. Eric Walther recommends for streetside test.

Ulmus alata. One of a list of 15 trees recommended for streetside planting in Bakersfield. "Drought and pest resistant."

Zelkova serrata. Not a new tree, but rapidly gaining in popularity. At Saratoga, we are searching for a form with a narrower crown.

The demand today is for smaller shade trees. In response to this demand, we are searching for smaller, or more compact, forms of trees now in common use as well as for small new trees. So that we can put these into production, any help in the location of specimens of any of the following horticultural forms will be greaty appreciated.

Acer platanoides columnare with a columnar habit, and *A. platanoides globosum* with a dense, rounded crown. E. H. Scanlon is sending us buds of the former from Ohio.

Acer saccharinum pyramidale. Has a pyramidal habit.

Cinnamomum Camphora. An upright form with narrow crown is desired.

Ginkgo biloba fastigiata. Although we now have several fine fastigiate types of male ginkgo established at Saratoga, we are still searching for additional forms with drought endurance. *Ginkgo biloba aurea.* Has bright yellow leaves.

Liriodendron Tulipifera fastigiatum. Has a narrow pyramidal habit. E. H. Scanlon is sending us buds of a form of this from Ohio.

Liquidambar Styraciflua. Individual trees having the most highly and varied colored autumn foliage.

Magnolia grandiflora lancelota (exoniensis, stricta). Has narrower leaves and pyramidal habit. *Magnolia grandiflora fastigiata.* We are now propagating from two fine upright individuals, but are looking for additional mature specimens with crowns less than 15 feet in diameter.

Platanus acerifolia. A disease-resistant strain is badly needed. *Platanus acerifolia pyramidalis.* Has an upright habit.

Prunus Lyonii. Highly variable species. The form desired is a small tree having entire, oblong-ovate leaves, about 3 to 5 inches long.

Quercus agrifolia. An upright form with narrow crown is desired.

Quercus Ilex Fordii. Has a pyramidal habit.

Robinia PseudoAcacia erecta with a columnar habit; *R. PseudoAcacia pyramidalis* with a pyramidal habit and spineless branchlets; and *R. PseudoAcacia umbraculifera* with a dense crown and spineless branches.

Tilia platyphyllos pyramidalis with a pyramidal habit, and *T. platyphyllos globosa* with a rounded crown. *T. cordata pyramidalis.* Has a narrow upright habit.

Ulmus parvifolia sempervirens. The form desired should be upright with strong ascending branches that are only slightly pendulous.

We are searching for stunted forms of the following: *Sequoia sempervirens, S. gigantea, Pinus radiata, Libocedrus decurrens, Pseudotsuga taxifolia,* and other native trees.

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Practically trained tree man to join growing organization in the State of Virginia. Age 25 to 35 years. No selling. Salary with share in corporation earnings. Right man may later become financially interested in our business. Personal interview in New York City or Charlottesville, Virginia. Mention previous experience when writing.

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Authors and Books

The following books may be ordered from *Trees* Magazine, Box 5607, Cleveland, Ohio

PROCEEDINGS TENTH SHORTCOURSE ON ROADSIDE DEVELOPMENT. Dept. of Landscape Architecture, The Ohio State University and The Ohio Dept. of Highways, Columbus, Ohio. 186 pgs., illus.

It was nice to see this worthy volume dedicated to the man who had been such a spirit in founding and popularizing the Roadside Short Course—too it is a tribute to those still active to recognize one who has retired. Dallas D. Dupre, Jr., lent his talent and energy for many years, as Chief Landscape Architect of the Ohio Highway Department, to the nationwide recognition of this course.

Many fine papers on subjects dealing with roadside development were given, for example: "Utility Line Maintenance Within the Highway Right of Way"; "Advancement in Erosion Control Protection by Seeding and Mulching"; "Advancement in the Use of Woody Plants"; "Roadside Development as it Affects Highway Maintenance." These and twelve other titles form a very comprehensive and informative proceedings that is worth many hours of study.

* * * *

TREE CLEARANCE FOR OVERHEAD LINES (2nd Edition) by George D. Blair. Electrical Publications Inc., 22 E. Huron St., Chicago (11), Ill. 242 pgs., illus. $4.75.

The first edition of this fine book was published in 1939 but soon sold out. There has been such a heavy demand for copies since the war that Mr. Blair decided to bring the work up to date in a second edition. He has done an admirable job. The book is well and copiously illustrated. This factor serves well to bring out the many intricacies involved in the dual objective of maintaining line service and tree beauty.

In the thirteen chapters are the following subjects: Overhead Line Construction; Economics of Line Clearance; Proper Tree Care; Standard Clearances; Law and Regulations; Trimming, and Safety.

This book is one of the fine basic manuals in the field of arboriculture and every arborist and city forester should be thoroughly acquainted with its valuable contents.

* * * *

PRINCIPLES OF WEED CONTROL, by Ahlgren, Klingman and Wolf. John Wiley & Sons Inc., 440 Fourth Ave., New York 16, N. Y. 368 pgs. illus. $5.50.

This book brings together for the first time the underlying principles, the up-to-date facts, and the control techniques of this rapidly growing science. Here are assembled all the important data with which anyone interested in weed control should be familiar and should have within arm's reach for ready reference.

Principles of Weed Control contains vital facts and fundamentals associated with weeds, their life and habits, and, most important of all, shows how to control scientifically all types of weeds—weeds found in raw crops, small grains, and flax, in legume and vegetable crops, in highway rights-of-way, in various types of grasslands, in lakes, ponds, irrigation ditches, and in lawns, trees, shrubs and flowers.

Providing a chemical background to help understand and interpret the data presented, the authors discuss thoroughly the principal control chemicals (with particular emphasis on 2, 4-D.D.). The effects of herbicides on the life and functions of plants are effectively treated in a separate chapter. Here also is valuable information on poisonous weeds and their control, soil sterilants, chemical and mechanical methods of defoliation, and the various ground sprayers, airplane sprayers, hand sprayers, and flame throwers.

Written by outstanding men in the field of Weed Control Research and Development, this book holds the key to new, helpful ideas and new scientific information which will open the door to efficient control, and in some cases, complete eradication of weed problems.

* * * *

AMERICAN WOODS, by Shelley E. Schoonover. Watling & Co., 406 Wilshire Blvd., Santa Monica, Calif. 250 pgs., illus. $7.50.

Basically this book is offered as a comprehensive manual of reference for the craftsman, hobbyist, designer or artist, with descriptions including color, grain, figure, workability and availability of over 150 species of wood. It goes beyond this premise with its 24 fall color and 48 black and white plates of wood specimens as well as 20 full-page plates of beautiful trees. It is really a fascinating discussion, with much local color, of most of the fine American trees. The illustrations of trees, mostly full page, are beautiful specimens, a pleasing departure from most species pictures, and are also photographic masterpieces.

The color plates of wood sections are beautiful things of amazing accuracy. This book is the ideal Xmas gift for anyone who likes beautiful books in addition to educational and fascinating reading.

* * * *

FORESTRY IN FARM MANAGEMENT, Second Edition) by Westveld and Peck. John Wiley & Sons, Inc., New York, 340 pgs., illus. $5.00.

This second edition . . . combines basic principles with new forest techniques and equipment which have made farm forestry work easier, cheaper, faster—generally more efficient. Incorporating all the features which made the first edition "superior to any other book published on farm woodlands," Professor Westveld presents an unparalleled treatment of Farm Forestry Management principles and policies—*applicable to all sections of the United States.* Throughout the book, the farm forest is treated as an integral part of the farm which must be coordinated with all other farm operations.

New in this thoroughly revised edition is complete, up-to-date information on: power saws and tree planting machines which reduce the amount of hand labor needed for harvesting trees and for planting new ones, and which effectively lower operational costs . . . new preservatives and methods for using them . . . new shearing techniques which produce top quality Christmas trees . . . important data on protection from fire, grazing, insects, wild animals, and climatic extremes . . . quick, practical methods of cutting, logging, soil preparation, and slash disposal . . . helpful data on techniques and tools used in converting trees into products . . . form-class tables, rule-of-thumb method for standing timber, and techniques and formulas for measuring growth . . . an informative chapter on federal, state and private aid programs . . . an Appendix, of eight sections, which gives information to help the reader apply the general principles explained in the book to local problems.

Covering all phases of farm forestry, the author also shows how to improve and perpetuate existing farm forests and how to establish new farm forests, how to make trees into valuable products and how to make the best use of wood, how to market farm forest products and how to keep farm forest plans and records.

* * * *

TREES FOR AMERICAN GARDENS, by Donald Wyman. The Macmillan Co., New York, N. Y. 376 pgs., illus. $7.50.

Order this book by all means and work by it. This is definitely a breath of fresh air infiltrating the stagnant atmosphere that has surrounded most publications on trees in the past. The emphasis is not provincially on natives, and consequently not tiresome or misleading as is the case in the very ordinary tree books that have preceeded.

Dr. Wyman has made a fine contribution in the constructive approach to the proper use of trees. Altho there is little information on definite methods and placement of various sizes and forms still the lists of "new" trees under the chapter "Trees for Various Purposes." The numerous sub-titles include such valuable work aids as "Trees With Thorny Twigs"—"Trees of Different Heights"—"Trees for Shelterbelts"—"Trees with Fragrant Flowers"—"Trees with Fragrant Leaves"—"Trees for Seashore Planting."

The "General List of Recommended Trees" is an excellent commentary based on height, zone, a brief non-technical description of the trees and interesting comment on its desirability and other pertinent data. The better trees that have been proven in the Arnold Arboretum and other botanical collections, as well as in small plantings thruout the country are emphasized and a plea made for a great expansion of their use.

An unfortunate and, we consider, a rather serious error occurred in the chapter "Street and Highway Planting." On page 85 is a picture of the street of beautiful Globe smoothleaf elm (U. carpinifolia umbraculifera) in Moline, Illinois, which is incorrectly captioned "Moline elm as it is planted in Moline, Ill." This should be corrected. The Moline elm is an inferior variety of American elm, of upright habit, while the Globe elm is a very superior variety for street and other formal use.

This book we hope will have a powerful influence toward the appreciation and use of hundreds of tree species now too seldom seen outside of collections. The primary or selected list of 745 species and varieties is excellent altho we cannot agree with the listing of a number of the smaller growing Asiatic maples in the secondary list of 1600 species and varieties. This is minor tho considering the overall excellence and freshness of this the finest tree book published to date. We hope you will obtain it immediately and USE IT.

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